

TROPICAL RAINFALL MEASURING MISSION

April 5, 1999 - April 11, 1999

DOY 095 - 101

Day of Mission 494 - 500

TRMM MISSION OPERATIONS

- TRMM is flying in the -X Forward direction as of 99-085, at 14:51:27z.
- The next Yaw maneuver is scheduled for April 16 (99-106).
- Delta-V maneuver #92 is scheduled for April 14 (99-104) using the ISP thrusters.
- The Beta angle range for DOY 102 to 108 is -19.2° to $+9.9^{\circ}$.

TRMM SUBSYSTEM OPERATIONS

Attitude Control System

On 99-095, ACS System Table #85 (Ephemeris Limits Table) was loaded to the spacecraft to widen the continuity limits for the TDRS ephemerides (Anomaly #60). After the ephemerides was accepted by the spacecraft, the nominal Table #85 was copied from EEPROM to RAM.

Delta-V maneuver #90 was successfully conducted on 99-096 at 17:02:46z and 17:48:30z, for durations of 29.625 and 20.0 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) was 38.9% and 38.1% respectively (61.1% and 61.9% on time). The remaining fuel is 742.5 kg and the final apogee and perigee height is 354.81 km x 347.44 km.

Delta-V maneuver #91 was successfully conducted on 99-100 at 15:39:49z and 16:25:36z, for durations of 39.0 and 19.0 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) was 38.8% and 34.9% respectively (61.2% and 65.1% on time). The remaining fuel is 741.114 kg and the final apogee and perigee height is 354.87 km x 347.50 km.

The ESA experienced Moon interference in quadrants 1 and 3 during 99-099 through 101. The ACS performed nominally during the transition between 3 and 4 head control.

ACS System table #53, which now contains ESA quadrant blocked times of 16 minutes, was uplinked on 99-097. FDCs #81 - 84, which use these values, will be re-enabled during the week of 99-102.

Flight Data System (FDS)/Command & Data Handling (C&DH)

The frequency standard continues to drift in the negative direction. The frequency standard remains at x759 with a current drift rate of $-1.91 \mu\text{s/hr}$. The UTCF remains at 31535996.867749 sec with a current drift value of $-812 \mu\text{s}$.

A framer error occurred on the S/C processor on 99-096 at 04:11z (closed Anomaly #47).

Q-Channel Restarts occurred on 99-098 at 22:20:16z and 23:48:48z, 99-099 at 22:59:14z, 99-100 at 15:36:24z and 18:06:26z, and 99-101 at 05:25:24z and 20:11:59z.

The Flywheel dwell value incremented to x'100' on 99-099 at 07:16:33z and to x'101' on 99-100 at 14:25:20z (Anomaly #51).

Reaction Control Subsystem (RCS)

The RCS subsystem performed nominally during this period. See the ACS section for specific Delta-V information.

Power Subsystem

The Power subsystem operated nominally during this period. Due to the CERES testing and longer eclipse durations, both SOC counters have been operating below 100% since 99-081. Battery 2 SOC counter recovered to 100% on 99-096 and Battery 1 SOC counter recovered to 100% on 99-097. There are no plans to change any settings at this time.

Electrical Subsystem

The Electrical subsystem operated nominally during this period.

Thermal Subsystem

The Thermal subsystem operated nominally during this period.

Deployables Subsystem

The Deployables subsystem performed nominally during this period.

RF/Communications Subsystem

The RF/Communications subsystem has performed nominally during this period.

One generic late acquisition occurred during the week with no loss of data - see Late Acquisition Report section for more information.

SPACECRAFT INSTRUMENTS

CERES

CERES personnel are developing a plan for operating the instrument with the +15 V DAA anomaly. The FOT proposal which describes the new method for leaving CERES powered on for SunAcq/Safehold events is awaiting final review, approval and testing.

The next instrument power on and science collection period is planned for the end of May.

LIS

LIS performed nominally during this time period.

PR

PR performed nominally during this time period. The list of Internal Calibration times for the week is listed below.

1999:095:12:40:13 - 12:44:47z
1999:095:19:10:43 - 19:12:56z
1999:096:19:33:24 - 19:35:31z
1999:097:11:51:57 - 11:53:33z
1999:097:18:22:09 - 18:24:22z
1999:098:10:42:34 - 10:44:36z
1999:098:18:44:56 - 18:47:02z
1999:099:17:33:25 - 17:35:36z
1999:100:09:51:44 - 09:55:59z
1999:100:17:55:56 - 17:58:03z
1999:101:16:44:44 - 16:46:55z

TMI

TMI performed nominally during this time period.

VIRS

VIRS performed nominally during this time period.

GROUND SYSTEM

Y2K testing has been completed on string 3. During the week of 99-102, operational testing will be performed by the FOT. String 3 is planned to be returned to normal operations by 99-109.

On 99-095 during the 11:06z TDW/SSA1 event, NASCOM was performing a WAN/LAN IP router transition upgrade which unexpectedly caused the I&Q channels to dropout for the last 12 min 13 sec of the event (Event #99). All recorded data was recovered.

Event Reports

#99 NASCOM WAN/LAN router upgrade caused I&Q channel dropout.

Generic Late Acquisition Reports (for TTRs 19639)

#31 TDW/SA1: 99-095 at 09:28z event 52 seconds.

New Anomaly

No new Anomaly Reports were opened during this week.

Recurring Open Anomalies

#51 - Pri S/C TC Mode.

#60 - EPV Failed Continuity.

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